

WISCONSIN ELECTRIC

POWER COMPANY

POINT BEACH NUCLEAR PLANT

UNIT NOS. 1 AND 2

Semiannual

Monitoring Report

January 1, 1981 through June 30, 1981

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U.S. Nuclear Regulatory Commission  
Docket Nos. 50-266 and 50-301  
Facility Operating License Nos.  
DPR-24 and DPR-27

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## 1.0 RADIOACTIVE LIQUID RELEASES

Radioactive liquid releases via the circulating water discharge are summarized for total release and by individual source on a monthly basis in Table 1-1. An isotopic breakdown of the total radioactive liquid release is presented in Table 1-2.

The total radioactive liquid release excluding tritium for this reporting period was  $2.83\text{E-}01$  Curies which included  $2.14\text{E-}02$  Curies of processed radioactive waste and primary coolant system letdown,  $2.44\text{E-}01$  Curies of Unit 1 steam generator blowdown,  $1.75\text{E-}02$  Curies of Unit 2 steam generator blowdown. There was no measurable release other than tritium via retention pond effluent. The total tritium release for this reporting period was 300 Curies, which included 296 Curies of processed radioactive waste and primary coolant system letdown, 3.05 Curies of Unit 1 steam generator blowdown,  $7.81\text{E-}01$  Curies of Unit 2 steam generator blowdown, and  $4.45\text{E-}01$  Curies of retention pond effluent. All radioactive liquid releases to Lake Michigan were made through the circulating water discharge.

### 1.1 Additions to Semiannual Monitoring Report July 1, 1980, through December 31, 1980

	<u>December</u>	<u>Total</u>
Total Activity Released, Ci		
Gross Alpha	$5.07\text{E-}06$	$4.83\text{E-}05$
Average Diluted Discharge Concentration, $\mu\text{Ci/cc}$		
Gross Alpha	$1.15\text{E-}13$	
% MPC	$3.83\text{E-}04$	

The following data which was either not available or not supplied at time of report preparation should be added to Table 1-2 of the Semiannual Monitoring Report July 1, 1980, through December 31, 1980.

	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>Total</u>
Sr-89	<MDA	<MDA	$4.43\text{E-}07$	<MDA	<MDA	$7.91\text{E-}05$	$7.95\text{E-}05$
Sr-90	$1.70\text{E-}04$	$1.78\text{E-}04$	$7.39\text{E-}05$	$7.68\text{E-}05$	$1.55\text{E-}04$	$6.26\text{E-}04$	$1.28\text{E-}03$
Alpha	$2.08\text{E-}05$	$1.15\text{E-}05$	$7.31\text{E-}06$	$4.22\text{E-}06$	$2.00\text{E-}06$	$5.07\text{E-}07$	$4.63\text{E-}05$

1.2 Corrections to Semiannual Monitoring Report January 1, 1980,  
Through June 30, 1980

The following data which was reported in error should be changed on Table 1-2 of the Semiannual Monitoring Report January 1, 1980, through June 30, 1980.

<u>Activity Released, Ci</u>	<u>June</u>	<u>Total</u>
Sr-90	1.04E-04	1.52E-03

1.3 Corrections to Semiannual Monitoring Report July 1, 1980, through  
December 31, 1980

The following data which was reported in error should be changed on Tables 1-1 and 1-2 of the Semiannual Monitoring Report June 1, 1980, through December 31, 1980.

TABLE 1-1

<u>Total Activity Released, Ci</u>	<u>November</u>	<u>Total</u>
Gamma Scan	4.56E-02	1.98E-01
Gross Alpha	2.00E-06	(3)
Tritium	1.88E-02	4.76E+02

Average Diluted Discharge  
Concentration,  $\mu\text{Ci/cc}$

Gross Beta-Gamma	1.13E-09
% MPC	1.75E-01
Gross Alpha	4.95E-14
% MPC	1.65E-04
Tritium	4.65E-06
% MPC	1.55E-01

Maximum Discharge Concentration  
During Release Period,  $\mu\text{Ci/cc}$

Gross Beta-Gamma	1.91E-08
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(3) Data unavailable at time of report writing.

1.3 Corrections to Semiannual Monitoring Report July 1, 1980,  
through December 31, 1980 (continued)

TABLE 1-2

<u>Nuclides</u> <u>Released</u>	<u>November</u> <u>(Curies)</u>	<u>Total</u> <u>(Curies)</u>
H-3	1.883+02	4.76E+02
F-18	6.02E-04	8.93E-03
I-131	1.65E-02	4.43E-02
I-132	1.80E-03	6.18E-03
I-133	1.34E-02	4.25E-02
I-134	4.17E-04	4.82E-04
I-135	4.96E-03	1.24E-02
Xe-133	1.72E-03	4.11E-02
Xe-135	2.22E-04	1.61E-03
Cs-134	9.26E-04	2.36E-03
Cs-137	2.80E-03	1.17E-02
Total	4.56E-02	1.98E-01

TABLE 1-1

RADIOACTIVE LIQUID CIRCULATING WATER RELEASE SUMMARY  
PERIOD JANUARY 1 TO JUNE 30, 1981

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Total</u>
Total Activity Released, Ci							
Gamma Scan (1)	2.29E-02	2.37E-02	8.43E-02	5.89E-02	3.28E-02	6.00E-02	2.83E-01
Gross Alpha	1.03E-05	<MDA	<MDA	<MDA	<MDA	(3)	(3)
Tritium	5.20E+01	1.65E+01	4.53E+01	9.67E+01	5.61E+01	3.33E+01	3.00E+02
Total Volumes Released, Gal:							
Processed Waste	7.48E+04	5.60E+04	8.19E+04	2.47E+05	2.01E+05	6.80E+04	7.29E+05
Steam Generator Blowdown, Unit 1	2.91E+06	2.46E+06	2.58E+06	2.67E+06	3.03E+06	2.92E+06	1.66E+07
Steam Generator Blowdown, Unit 2	2.70E+06	2.37E+06	2.54E+06	1.15E+06	1.08E+06	2.64E+06	1.25E+07
Retention Pond	1.62E+06	1.49E+06	1.56E+06	1.67E+06	1.25E+06	1.41E+06	9.00E+06
Total	7.50E+06	6.38E+06	6.76E+06	5.74E+06	5.56E+06	7.04E+06	3.88E+07
Volume of Dilution Water, ml/cc	3.92E+13	3.52E+13	3.90E+13	4.88E+13	6.07E+13	6.06E+13	2.84E+14
Average Diluted Discharge Concentration, $\mu\text{Ci/cc}$							
Gross Beta-Gamma	2.85E-10	6.73E-10	2.17E-09	1.20E-09	5.40E-10	9.92E-10	
% MPC (1) (2)	4.09E-02	5.50E-02	2.96E-01	1.01E-01	4.88E-02	1.20E-01	
Gross Alpha	2.62E-13	<MDA	<MDA	<MDA	<MDA	(3)	
% MPC	8.72E-04	---	---	---	---	(3)	
Tritium	1.33E-06	4.69E-07	1.16E-06	1.98E-06	1.24E-07	5.46E-07	
% MPC	4.43E-02	1.56E-02	3.87E-02	6.60E-02	3.08E-02	1.82E-02	
Maximum Discharge Concentration During Release Period, $\mu\text{Ci/cc}$							
Gross Beta-Gamma (1)	2.00E-03	2.64E-09	6.83E-09	5.11E-08	1.87E-09	6.28E-09	
Tritium	1.75E-04	3.65E-05	1.03E-04	1.28E-04	4.58E-05	5.98E-05	

NOTES: (1) Not including strontium results which generally have a negligible effect.  
(2) Summation of the individual isotopic 10 CFR 20, Appendix B Table II MPC's.  
(3) Data unavailable at time of report writing.

TABLE 1-2

ISOTOPIC COMPOSITION OF CIRCULATING WATER DISCHARGES  
PERIOD JANUARY 1 TO JUNE 30, 1981

<u>Nuclides Released</u>	<u>January (Curies)</u>	<u>February (Curies)</u>	<u>March (Curies)</u>	<u>April (Curies)</u>	<u>May (Curies)</u>	<u>June (Curies)</u>	<u>Total (Curies)</u>
H-3	5.20E+01	1.65E-01	4.53E+01	9.67E+01	5.61E+01	3.33E+01	3.00E+02
F-18	8.40E-04	7.68E-04	<MDA	<MDA	2.53E-04	2.52E-03	4.38E-03
Mn-54	<MDA	<MDA	<MDA	1.29E-04	<MDA	<MDA	1.29E-04
Co-58	3.00E-06	1.46E-05	<MDA	2.78E-04	7.23E-04	3.22E-05	1.05E-03
Co-60	4.48E-04	7.07E-05	2.15E-04	2.85E-04	6.52E-04	2.37E-04	1.91E-03
Kr-85m	<MDA	<MDA	<MDA	4.17E-04	<MDA	3.80E-06	4.21E-04
Sr-89	<MDA	4.01E-05	2.13E-04	<MDA	1.35E-05	(1)	(1)
Sr-90	5.17E-05	2.05E-05	1.13E-04	6.57E-05	9.54E-05	(1)	(1)
Nb-95	3.61E-06	<MDA	<MDA	<MDA	<MDA	<MDA	3.61E-06
Ru-103	<MDA	1.23E-04	<MDA	<MDA	<MDA	<MDA	1.23E-04
Ag-110m	<MDA	5.80E-06	<MDA	5.66E-06	<MDA	<MDA	1.15E-05
Sb-125	<MDA	<MDA	9.60E-06	<MDA	<MDA	<MDA	9.60E-06
I-131	2.75E-03	2.36E-03	2.51E-02	7.92E-03	4.10E-03	1.47E-02	5.69E-02
I-132	2.05E-03	2.34E-03	4.97E-03	4.33E-03	1.76E-03	2.88E-03	1.83E-02
I-133	8.49E-03	9.38E-03	2.55E-02	1.36E-02	1.28E-02	2.00E-02	8.98E-02
I-134	2.30E-03	1.1E-03	6.49E-04	1.86E-03	2.00E-04	1.03E-03	7.26E-03
I-135	5.77E-03	6.5E-03	1.38E-02	1.29E-02	8.89E-03	9.96E-03	5.79E-02
Xe-133m	<MDA	<MDA	<MDA	1.32E-04	<MDA	<MDA	1.32E-04
Xe-133	6.15E-05	1.04E-04	2.65E-03	1.59E-02	6.31E-04	1.03E-04	1.94E-02
Xe-135	2.48E-05	2.18E-04	1.46E-04	6.20E-05	1.03E-03	3.47E-05	2.32E-03
Cs-134	<MDA	1.06E-04	3.35E-03	1.86E-04	4.75E-04	3.74E-03	7.86E-03
Cs-136	<MDA	<MDA	<MDA	2.09E-05	<MDA	<MDA	2.09E-05
Cs-137	1.85E-04	4.32E-04	6.70E-03	7.05E-04	1.35E-03	4.00E-03	1.34E-02
Cs-138	<MDA	<MDA	5.50E-04	<MDA	<MDA	9.21E-04	1.47E-03
Ce-144	<MDA	<MDA	<MDA	1.89E-05	<MDA	<MDA	1.89E-05
Alpha	1.03E-05	<MDA	<MDA	<MDA	<MDA	(1)	(1)
Total							2.83E-01(2)

NOTES: <MDA - Less than minimum detectable activity.  
 (1) - Data unavailable at report time.  
 (2) - Total does not include tritium, strontium, or alpha.

## 2.0 RADIOACTIVE AIRBORNE RELEASES

Radioactive airborne releases during normal plant operation are reported by total release in Table 2-1, and summarized by isotope in Table 2-2. The release paths contributing to radioactive airborne releases during this reporting period were the auxiliary building vent stack, Unit 1 containment purge stack, Unit 2 containment purge stack, drumming area vent stack, gas stripper building ventilation exhaust, combined air ejector decay duct exhaust and turbine building ventilation exhaust.

There were no gas decay tank releases during this report period.

### 2.1 Additions to the Semiannual Monitoring Report, July 1, 1980, through December 31, 1980

The following data which was not available at the time of the report preparation should be added to Table 2-2 in Section 2.0 of the Semiannual Monitoring Report covering the period July 1, 1980, through December 31, 1980.

	<u>October</u>	<u>November</u>	<u>December</u>	<u>Total, Ci</u>
Sr-89	<MDA	<MDP	<MDA	---
Sr-90	<MDA	<MDA	<MDA	---

TABLE 2-1

RADIOACTIVE AIRBORNE RELEASE SUMMARY  
PERIOD JANUARY 1 TO JUNE 30, 1981

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Total</u>
Total Curies Released (Excluding Tritium)	3.94E+01	1.52E+01	7.44E+01	5.32E+01	5.63E+01	4.91E+01	2.88E+02
Total Xe-133 Equivalent Curies Released <sup>1</sup>	3.54E+02	1.50E+02	4.91E+02	1.38E+03	8.46E+02	4.38E+02	3.66E+03
Average Release Rate (Curies/Second) <sup>2</sup>	1.32E-04	6.20E-05	1.83E-04	5.34E-04	4.76E-04	1.69E-04	
Percent of Annual Technical Specification Limits <sup>3</sup>	6.61E-02	3.11E-02	9.17E-02	2.67E-01	2.38E-01	8.44E-02	
Maximum Hourly Average Release Rate (Curies/Second) <sup>4</sup>	8.34E-04	3.31E-04	5.95E-04	9.80E-04	7.10E-04	3.81E-04	
Monthly Average Site Boundary Concentration ( $\mu$ Ci/cc) <sup>2</sup>	1.98E-10	9.32E-11	2.75E-10	8.01E-10	7.14E-10	2.53E-10	

<sup>1</sup> All gaseous and particulate releases are converted to "Xe-133 equivalent" for calculational purposes using the ratio  $MPC_{Xe-133}/MPC_i$ . MPC's for isotopes of iodine and particulate with half-lives longer than eight days are reduced by a factor of 700.

<sup>2</sup> Averaged over one month and based on Xe-133 equivalent.

<sup>3</sup> Annual average Technical Specification limits are 0.2 Ci/sec Xe-133 based on  $X/Q = 1.5 \times 10^{-6}$  sec/m<sup>3</sup>. Maximum Technical Specification limits are 2.0 Ci/sec Xe-133 based on  $X/Q = 1.5 \times 10^{-6}$  sec/m<sup>3</sup>.

<sup>4</sup> Expressed as Xe-133 equivalent.

TABLE 7-2

RADIOACTIVE AIRBORNE RELEASE SUMMARY  
PERIOD JANUARY 1 TO JUNE 30, 1981

	January (Curies)	February (Curies)	March (Curies)	April (Curies)	May (Curies)	June (Curies)	Total (Curies)
Tritium	5.67E+01	4.71E+01	7.58E+01	3.53E+01	5.87E+01	4.51E+00	2.78E+02
Noble Gases							
Ar-41	1.76E+00	3.56E+00	1.63E+00	1.11E+01	2.97E+00	1.17E+01	3.27E+01
Kr-85	6.46E-01	4.68E-01	1.36E+00	1.27E+00	3.82E+00	1.99E+00	9.55E+00
Kr-85m	3.66E+00	1.03E+00	6.43E+00	3.37E+00	2.84E+00	3.30E+00	2.06E+01
Kr-87	1.47E+00	4.48E-01	3.02E+00	1.45E+00	1.66E+00	1.61E+00	9.69E+00
Kr-88	5.39E+00	1.48E+00	9.74E+00	4.69E+00	4.34E+00	4.73E+00	3.04E+01
Xe-131m	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	---
Xe-133	1.03E+01	2.89E+00	1.97E+01	1.36E+01	2.24E+01	7.11E+00	7.60E+01
Xe-133m	1.62E-01	1.77E-02	3.27E-01	6.92E-02	1.22E-01	6.15E-02	7.59E-01
Xe-135	1.41E+01	3.88E+00	2.82E+01	1.28E+01	1.28E+01	1.22E+01	8.40E+01
Xe-135m	7.71E-01	4.99E-01	1.65E+00	1.69E+00	2.22E+00	2.29E+00	9.12E+00
Xe-138	1.16E+00	9.25E-01	2.26E+00	3.07E+00	3.22E+00	4.15E+00	1.48E+01
Particulates with Half Lives Less Than Eight Days							
F-18	<MDA	<MDA	6.32E-08	<MDA	<MDA	<MDA	6.32E-08
Rb-88	9.96E-03	1.02E-03	4.58E-04	1.19E-01	2.92E-04	9.68E-04	1.32E-01
Te-132	2.95E-06	<MDA	1.27E-08	<MDA	<MDA	1.82E-08	2.98E-06
Cs-138	1.05E-03	1.37E-03	5.41E-05	8.33E-03	2.24E-06	4.51E-04	1.13E-02
Particulates with Half Lives Greater Than Eight Days and Iodines							
Cr-51	1.99E-10	<MDA	<MDA	<MDA	5.38E-06	<MDA	5.38E-06
Co-58	<MDA	<MDA	<MDA	<MDA	3.02E-06	5.11E-07	3.53E-06
Co-60	2.20E-06	4.19E-07	5.29E-08	1.24E-07	1.37E-05	3.99E-07	1.69E-05
Zr-95	<MDA	1.05E-07	<MDA	8.03E-05	1.71E-05	<MDA	9.75E-05
Ru-103	<MDA	<MDA	<MDA	4.19E-06	<MDA	<MDA	4.19E-06
Sr-89	5.20E-05	4.28E-05	4.34E-05	(1)	(1)	(1)	---
Xr-90	<MDA	<MDA	<MDA	(1)	(1)	(1)	---
Ag-110m	<MDA	<MDA	<MDA	<MDA	1.24E-09	<MDA	1.24E-09
Sb-125	<MDA	<MDA	<MDA	<MDA	<MDA	1.28E-08	1.28E-08
I-131	4.47E-05	2.44E-05	4.92E-05	4.04E-04	4.62E-04	5.85E-05	1.04E-03
I-132	7.33E-10	<MDA	1.27E-06	7.15E-05	4.83E-05	5.77E-08	1.21E-04
I-133	6.37E-05	1.93E-05	3.19E-05	4.49E-05	7.22E-06	2.15E-05	2.54E-04
Cs-134	4.87E-08	2.21E-08	1.37E-06	<MDA	5.22E-06	1.24E-10	6.66E-06
I-134	2.56E-09	<MDA	1.47E-07	<MDA	9.20E-08	4.63E-07	7.05E-07
I-135	8.90E-08	<MDA	3.93E-06	<MDA	3.45E-08	2.07E-07	4.26E-06
Cs-137	5.54E-07	5.06E-07	2.97E-06	6.31E-06	1.22E-05	4.15E-10	1.62E-05
Ce-139	1.03E-06	<MDA	<MDA	<MDA	<MDA	1.24E-10	1.03E-06
Nb-95	8.13E-11	5.21E-07	<MDA	4.35E-05	3.31E-05	<MDA	7.71E-05
Alpha	1.54E-06	<MDA	1.59E-11	1.25E-05	<MDA	4.50E-08	1.41E-05

NOTES: <MDA - Less than minimum detectable activity.

(1) - Data unavailable at report time.

### 3.0 RADIOACTIVE SOLID WASTE SHIPMENTS

Shipments offsite of solid waste for burial during this reporting period were as follows:

<u>Date</u>	<u>Volume (Ft.<sup>3</sup>)</u>	<u>Total Activity (Ci)</u>
01-20-81	484.5	0.47
02-17-81	486.8	2.73E-03
03-17-81	382	0.275
03-25-81	105	2.64
04-14-81	435	0.125
05-13-81	87	5.46(1)
05-19-81	352.5	0.25
06-02-81	281.5	4.64E-02
06-03-81	61.5	0.668
06-09-81	61.5	0.909
06-16-81	61.5	0.655
Total	2,798.8	11.5

(1) Involved spent resin

### 4.0 NEW AND SPENT FUEL SHIPMENTS AND RECEIPTS

During this reporting period, a total of 32 new fuel assemblies were received from Westinghouse Electric Corporation for Unit 2. No new fuel assemblies were received for Unit 1. No spent assemblies were shipped from Unit 1 or 2.

## 5.0 RADIOLOGICAL ENVIRONMENTAL MONITORING

Radiological environmental monitoring conducted by Point Beach Nuclear Plant for the period from January 1, 1981, through June 30, 1981, consisted of air filters, gamma dose, vegetation, lake water, well water, milk, shore-line silt, soil, algae, and fish samples collected and analyzed in accordance with Technical Specification 15.4.10.

Fallout from the Chinese nuclear detonation of October 16, 1980 continued to appear in the airborne particulate and vegetation samples. All of the other measurements obtained during this period are well within the normal range.

<u>No.</u>	<u>Sample Type</u>	<u>Low</u>	<u>Average*</u>	<u>High</u>	<u>Units</u>
<u>TLDs</u>					
43	Quarterly	0.75	1.04 ± 0.40	1.77	mR/wk
<u>Air Filters</u>					
156	Gross Beta	0.02	0.16±0.14	0.34	pCi/m <sup>3</sup>
156	Radioiodine	----	all <0.03	----	pCi/m <sup>3</sup>
12	Gamma Scan	----	all <0.01	----	pCi/m <sup>3</sup>
<u>Milk</u>					
18	Radioiodine	----	all <0.05	----	pCi/l
18	Sr-89	<0.5	<5.2±1.7	8.5	pCi/l
18	Sr-90	1.5	2.9±2.8	5.7	pCi/l
18	Gamma Scan	----	all <5	----	pCi/l
<u>Lake Water</u>					
30	Gross Beta	2.0	4.1±2.9	8.7	pCi/l
30	Gamma Scan	----	all <10	----	pCi/l
10	Tritium	<0.50	<0.57±0.62	1.4	pCi/l
10	Sr-89	----	all <5	----	pCi/l
10	Sr-90	<1	<1.0±0.1	1.2	pCi/l
<u>Well Water</u>					
2	Gross Beta	4.2	4.6	4.9	pCi/l
2	Gamma Scan	----	both <10	----	pCi/l
2	Tritium	----	both <0.5	----	pCi/ml
2	Sr-89	----	both <5	----	pCi/l
2	Sr-90	----	both <1	----	pCi/l
<u>Vegetation</u>					
8	Gross Beta	16	27±18	41	pCi/g (dry)
8	Gamma Scan	----	all <1	----	pCi/g (dry)
<u>Soil</u>					
8	Gross Beta	11	23±14	28	pCi/g (dry)
8	Gamma Scan	----	all <1	----	pCi/g (dry)

<u>No.</u>	<u>Sample Type</u>	<u>Low</u>	<u>Average*</u>	<u>High</u>	<u>Units</u>
<u>Algae</u>					
2	Gross Beta	----	both 38	----	pCi/g (dry)
2	Gamma Scan	----	both <5	----	pCi/g (dry)
<u>Fish</u>					
3	Gross Beta	8.0	11 <sup>±</sup> 11	13	pCi/g (dry)
3	Gamma Scan	----	all <1	----	pCi/g (dry)
<u>Shoreline Silt:</u>					
5	Gross Beta	6.0	9.0 <sup>±</sup> 6.0	12	pCi/g (dry)
5	Gamma Scan	----	all <1	----	pCi/g (dry)

\*95% confidence interval given when applicable. Whenever samples below the detection unit are included in the computation of the average, the average is shown as a "less than" value.

#### 6.0 NON-RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

In accordance with Amendment numbers 29 and 33 to Facility Operating Licenses DPR-24 and DPR-27 respectively, dated November 4, 1977, the Environmental Technical Specifications for the Point Beach Nuclear Plant Units 1 and 2 were modified to allow temporary suspension of the non-radiological environmental monitoring program pending NRC review of the summary report of the five years of monitoring. As a result, the semiannual report specified by Item 16.6.2.a of the Technical Specification is not applicable.

## 7.0 NON-RADIOACTIVE CHEMICAL RELEASES

### 7.1 Scheduled Chemical Waste Releases

Scheduled chemical waste releases to the circulating water system for the period of 01-01-81 to 06-30-81 included 4,119,186 gallons of neutralized clear water waste. The waste water contained 418 pounds of suspended solids and 231,813 pounds of dissolved solids.\* When averaged over the reporting period, these discharges represented 64.98% of the Technical Specification limit for dissolved solids and 0.238% of the Technical Specification limit for suspended solids.\*\*

The concentration increases of chemical waste in the circulating water system during the period of chemical releases ranged from 0.79 to 9.79 ppm dissolved solids and from  $4.5\text{E}-04$  to  $4.73\text{E}-02$  ppm suspended solids.\*\*

Plant chemical records indicated that the following amounts of chemicals were released in the form of neutralized waste:

Sodium	71,398 pounds
Sulfate	167,592 pounds

\* Chemical releases calculated are based upon neutralized tank analysis prior to discharge.

\*\* Based on calculations during times of actual discharges.

### 7.2 Miscellaneous Chemical Waste Releases

Miscellaneous chemical waste releases to the circulating water system from the retention pond for the period of 01-01-81 to 06-30-81 included 8,970,000 gallons of clear water waste. The waste water contained 954 pounds of suspended solids and 50,200 pounds of dissolved solids.\* When averaged over the reporting period, these discharges were 0.829% of the Technical Specification limit for dissolved solids and 0.0309% of the limit for suspended solids.

Retention pond analysis and plant chemical records indicate that the following chemicals were released in the form of clear water waste from the retention pond.

Sodium	10,989 pounds
Chloride	16,958 pounds
Phosphate	34.8 pounds

The balance of the dissolved solids were in the form of soluble calcium and magnesium compounds resulting from the plant makeup water cold lime softening process.

\* Chemical release calculations are based on retention pond analyses during the period 01-01-81 to 06-30-81.

#### 8.0 CIRCULATING WATER SYSTEM OPERATIONS

The circulating water system operation during this reporting period for periods of plant operation is described in Table 8-1.

#### 9.0 LEAK TESTING OF RADIOACTIVE SOURCES

During the reporting period, all applicable sealed radioactive sources were leak tested according to Technical Specification requirement 15.4.12. Results of the leak testing showed no removable contamination greater than 0.005 microcuries from sealed radioactive sources.

TABLE 8-1

CIRCULATING WATER SYSTEM OPERATION

		<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>
Average Volume Cooling Water Discharge, Million Gal/Day	UNIT 1	333.8	332.1	331.8	430.2	517.5	533.9
	UNIT 2	324.6	328.8	323.3	505.0	412.8	549.0
Average Cooling Water Intake Temperature Degrees F	UNIT 1	43.2	41.0	38.4	45.1	46.4	47.7
	UNIT 2	45.1	42.6	38.2	45.3	46.3	48.0
Average Cooling Water Discharge Temperature Degrees F	UNIT 1	66.7	64.8	61.9	63.7	61.6	62.8
	UNIT 2	75.7	73.3	69.1	63.3	62.5	65.4
Average Ambient Temperature Degrees F	UNIT 1	4.7	11.3	19.6	29.7	36.7	47.4
	UNIT 2	(2)	(2)	(2)	(2)	(2)	(2)

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(1) Unit 2 was shut down for refueling from April 18, 1981, to May 21, 1981.

(2) Instrumentation out-of-service.